SF 2.1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

August 3, 1995

In Reply
Refer To: HW-113

Mr. Robert L. Geddes
Senior Environmental Engineer
Monsanto Chemical Company
P.O. Box 816
Soda Springs, ID 83276

Subject: Comments on the Draft Phase II Feasibility Study Development and Screening of Remedial Alternatives

Dear Mr. Geddes:

The purpose of this letter is to provide the U.S. Environmental Protection Agency's (EPA) comments on Monsanto's Draft Phase II Feasibility Study Development and Screening of Remedial Alternatives (DSRA). The DSRA was submitted in a timely manner based on the revised schedule (see EPA's June 5, 1995 letter) and was responsive to the requirements of the Administrative Order on Consent between EPA and Monsanto dated March 19, 1991. However, as we discussed in Seattle on July 12, 1995, the DSRA was not fully responsive to the comments and direction provided in EPA's May 15, 1995 comment letter and cannot be approved as submitted. A revised DSRA which fully addresses these comments is due to EPA on or before August 22, 1995.

If you have any questions about this letter please call me at (206) 553-2100 as soon as possible.

Sincerely,

Timothy H. Brincefield
Superfund Site Manager

Enclosure

cc: Gordon Brown, IDHW
Mike Thomas, IDHW
Catherine Krueger, EPA Superfund
Charles Ordine, EPA Associate Regional Counsel

Preliminary Comments and Questions Regarding the Development and Screening of Remedial Alternatives (DSRA) Prepared for The Monsanto Company by Montgomery-Watson, June 1995.

1. The remedial action objectives (RAOs) and preliminary remediation goals (PRGs) presented in Section 2 of the DSRA are not fully consistent with the approved RAO Memorandum (dated June, 1995) or the 5/15/95 comment language. The precise RAO language in the approved RAO memorandum must be used for the DSRA and addressed fully in the FS.

2. The DSRA does not address human health risks associated with radionuclides nor does it provide an adequate or sufficient justification for failing to do so. By doing so, the document does not meet NCP requirements or address EPA's 5/15/95 comments and will not provide decision-makers with the information necessary to evaluate and select an appropriate range of alternatives. Stating that a potential ARAR may be met does not address protection of public health and the environment. Also, while Radium-226 is the most significant source of radionuclide risk, the feasibility study should acknowledge and address all radionuclides exceeding RBCs, consistent with the RAO language. The DSRA and FS must be changed to include and evaluate alternatives for remediating radionuclides in soils and source piles (to prevent exposure or recontamination assuming continued operations).

3. The radium-226 soil concentrations presented in the EPA/SAIC risk assessment (0-1") differ from those described in this document (collected at 0-6"). Consequently, the exposure point concentrations calculated for radium-226 in the EPA/SAIC risk assessment were 13 and 12 pCi/g at the future Northern I and future Southern I residential scenario locations, respectively. The DSRA should use and address all the data used and evaluated in the risk assessment.

4. For on-site sources, the document appears to focus on the Underflow Solids (UFS) to the exclusion of other on-site source materials after Chapter 1. The justification provided for this was not easy to track in the document. In our meeting, you said that the intent was to focus on the UFS, which is arguably the most significant source, but to address all other measured sources. The text needs to be changed to clarify that other sources will also be addressed in the FS and how that will be accomplished.

5. The background UTL concentrations provided in this document are not completely consistent with those provided in the EPA/SAIC risk assessment. However, based on additional information provided to EPA/E&E and confirmed last week, the UTLs in the DSRA are technically defensible and can be used in the DSRA and FS.

6. It is unclear whether this document fully addresses the RAOs for groundwater and the 5/15/95 comments. In some places the document suggests only a portion of the affected groundwater will be addressed, while in other places it says the whole UBZ would be addressed. In our meeting you said that the text was unclear but that the intent was to address all contaminated groundwater zones, including the ones with contamination solely within plant boundaries. The DSRA (and RI) must be revised and clearly address contaminated groundwater zones located beneath the site as well as off-site.

7. The argument presented that the lack of current groundwater receptors makes the no action alternative acceptable and evaluation of groundwater treatment options unnecessary is unacceptable to EPA and IDHW. CERCLA and the NCP require consideration of actions to protect against potential exposure and to ensure restoration of potential drinking water resources. As we discussed at our meeting, the DSRA must either be revised to present an alternative rationale for screening that emphasizes the effectiveness of past actions and documents how treatment was considered at this time, or it must carry treatment forward for further evaluation..

8. Monsanto's proposed commitment to close the facility responsibly in accordance with the applicable laws and regulations at that time (DSRA pages 1 and 1-1) is welcomed and after further discussion, it **may** be sufficient to eliminate the need to further evaluate actions to be taken to prevent risks associated with significant changes in land use such as closure.
   a. In the revised document and/or your cover letter, please review how those areas have been/will be addressed, and provide additional information on how Monsanto has dealt with such issues and, when necessary, provided financial assurance in similar situations.
   b. The proposed commitment does not address ongoing or future migration of contaminants from on site sources to surrounding soils during continued operations, nor does it justify elimination of consideration of actions to reduce risk from exposure to off-site soils while the facility continues to operate. Those issues still need to be addressed in the FS. In the revised document and your cover letter, please review how those areas have been/will be addressed.

9. The number of remedial alternatives to be considered may have been reduced prematurely. In many cases, little or no discussion was offered to support elimination of options. While focussing of this FS is appropriate and encouraged, adequate documentation of how/why options were screened out in accordance CERCLA and the NCP must be provided (see Chapter 4 of the RI/FS guidance).

Specific Comments

1. Section 1.1, Page 1-2, Paragraph 1, Sentence 3. The sentence "Therefore the remedial alternatives developed in this FS must be compatible with Plant operations" must be struck and replaced with the following: "The remedial alternatives in this FS are being developed to be compatible with future Plant operations, assuming the plant continues to operate in accordance with appropriate Federal and State requirements."

2. Section 1.4.2, Page 1-22, Paragraph 3. It is stated that: "The constituents of potential interest are arsenic, beryllium, cadmium, vanadium, lead-210, polonium-210, radium-226, thorium-230, and uranium-238." and the RAOs specifically discuss radionuclides, yet the DSRA drops them out. Insufficient justification is provided in Section 2 to eliminate the radionuclides from further evaluation. Revise the DSRA to include radionuclides in soils and source piles.

3. Figure 1-8. The list of constituents of interest and target cleanup levels should be revised based on subsequent comments on Section 2. For example, radionuclides should be presented on this figure.

4. Section 2.1, page 2-2, paragraph 1. The justification presented for focussing on the UFS (in Chapter 1) was not adequate to focus the FS solely on the UFS stockpiles, nor was it clearly referenced. The text implies that only the UFS will be addressed in the FS (and, by implication, the ROD). The data and information discussed in Chapter 1 should be properly referenced and presented in a table to show the relative contributions of various sources, and the text should acknowledge that while the UFS is the most significant source, remediation of other sources will also be evaluated in the FS.

5. Section 2.1, page 2-2, Paragraph 2. The constituents of interest presented in this section must be changed to include radionuclides.

6. Section 2.2, page 2-2, paragraph 1. The radium-226 soil concentrations presented in the EPA/SAIC risk assessment (0-1") differ from those described in this document (collected at 0-6"). Consequently, the exposure point concentrations calculated for radium-226 in the EPA/SAIC risk assessment were 13 and 12 pCi/g at the future Northern I and future Southern I residential scenario locations, respectively. The DSRA should be changed to address both data sets.

7. Section 2.2, Page 2-3, Paragraph 1. It was not possible to verify the residential PRGs presented in Table 2-1 with the information presented in the DSRA; also, Radionuclide constituents were not included. Based on additional information provided subsequently, the <u>methods</u> used to

calculate PRGs are technically defensible. However, the following issues require attention:

a. The UCLs used in their calculations are taken directly from the EPA/SAIC risk assessment. These values should be recalculated from the same dataset used to calculate Montgomery-Watson's UTLs.

b. The target levels are based on 5×10^{-6}, 5×10^{-5}, and 5×10^{-4} risks, rather than 1×10^{-6}, 1×10^{-5}, and 1×10^{-4} risks, respectively. EPA acknowledges that under some circumstances, the "5x" values have been and can be used to set cleanup goals. Therefore, the "5x" values may be provided in addition to the "1x" values to inform the reader, but until or unless additional direction is given the "1x" values must be calculated, provided in the text, and used as the main focus of the DSRA/FS.

8. Section 2.2, Page 2-3, Paragraph 3. It is not appropriate to conclude in the DSRA that a potential ARAR will take precedence as a TCL over a site-specific risk value or a background concentration. The FS must address both protectiveness and compliance with ARARs. The purpose of the FS is to develop and evaluate feasible remedial alternatives. Final cleanup goals will be established in the ROD after the FS.

9. Section 2.3, Page 2-4. The list of constituents to be evaluated for groundwater should include manganese (see page 19 of the EPA/Monsanto RAO Memorandum).

10. Table 2-1. The PRGs and UTLs presented in this table should be changed in accordance with our discussions and the other comments to reflect the recent calculations performed by Montgomery watson and communicated to EPA.

11. Table 2-2. It was not possible to confirm the presented PRG for selenium based on protection of mice (17 mg/kg). Additionally, the potential phytotoxic concentration for zinc is 250 mg/kg, rather than 200 mg/kg (see Table 4-1 of the EPA/SAIC Ecological Risk Assessment). Please revise these ecological PRGs.

12. Table 2-3. The target cleanup goals presented in this table should be modified to address all RAOs and comments presented in this memorandum.

13. Section 3.1.1, page 3-2. As pointed out in Specific Comment 5, it is not appropriate to focus the FS solely on the UFS stockpiles.

14. Figure 3-1. The list of constituents of interest and target cleanup levels should be revised to address all RAOs and

comments presented in this memorandum.

15. Section 3.2.1, page 3-4, paragraph 3. Recycling a small percentage of source material while the overall amount of source material is increasing does not provide sufficient reason to eliminate the removal/excavation action. Absent further justification in accordance with the guidance, removal/excavation should be retained for further investigation. Similarly, ex-situ treatment of the on-site source materials and landfill disposal of the on-site source materials should also be retained and evaluated further.

16. Section 3.2.3. The rationale presented for eliminating all groundwater treatment actions contradicts the RAOs presented in the Monsanto RAO Memorandum dated June, 1995. On page 21 (Section 5.4, last paragraph), that document states that restoring groundwater to its most beneficial use by remediating all contamination above MCLs or risk-based concentrations shall be considered as RAO for environmental protection.

17. Section 3.4.1, Page 3-10. The state of Idaho has no mechanisms for enforcing deed restrictions. There is often difficulty getting local zoning ordinances passed and few assurances that such could not be changed. The DSRA acknowledges that implementability is an issue, but retains the alternative. This is acceptable, so long as the FS evaluates other alternatives for consideration.

18. Section 3.4.1, page 3-15. While certain portions of the OSH act are potentially relevant and appropriate, the OSHA is not necessarily an ARAR, much less a "protective ARAR". The FS must address protectiveness as well as all ARARs.

19. Section 3.4.2, page 3-16 and 3-17 (last paragraph) and Table 3-7. Solidification/fixation is characterized as moderate in effectiveness, implementability, and cost. However, it was eliminated for further evaluation. As a result, only one in-situ treatment process option is retained. According to EPA Guidance, implementability should be considered the most important factor. The evaluation should be reassessed and this process option should be retained for further evaluation if it is considered moderately implementable.

20. Section 3.4.1, Page 3-15. Additional consideration and or rationale should be given before eliminating liners, tarps, and silos from consideration.

21. Section 3. It would help the reader if a general description of each technology type and process option was provided or at least clearly referenced before performing the elimination process. Such an approach would serve the purpose of assisting the decision-maker to arrive a better understanding of the selection process.

22. Section 4. At this stage, each alternative should be evaluated as to its effectiveness in providing protection and the reductions in toxicity, mobility, or volume. Both short and long term components of effectiveness should be evaluated. Compared to Section 3, which primarily focused on whether specific technologies or process option could meet a particular remedial action objective, evaluation at this stage should be sufficiently detailed to distinguish among alternatives.

23. Section 5. Chemical- and location-specific ARARs should be included that are in accordance with the RI, using the language presented in the EPA/Monsanto RAO Memorandum. In particular, the Uranium Mill Tailings Radiation Control Act (42USC$7901 et seq.) and Safe Drinking Water Act should be included.